

## **SPECIFICATION AMENDMENTS:**

Please amend the paragraph on page 18, lines 17-20, as follows:

Table 4 shows that the metals are reduced, after the two reaction stages, from 353.5 wppm to 113.8 wppm, sulfur from 3.44% by weight to 0.66% by weight, asphaltenes from 12.4% by weight ~~peso a~~ to 4.67% by weight and the total nitrogen from 3,700 wppm to 2,045 wppm.

Please amend Table 3 on page 21, as follow:

**TABLE 3**  
Properties of HDM and HDS catalysts employed in each reaction stage

Properties	HDM catalyst	HDS catalyst
Reaction stage	I	II
<b>Physical properties</b>		
Size, cm.	0.254	0.158
Surface area, m <sup>2</sup> /g	175	248
Pore volume, cm <sup>3</sup> /g	0.56	0.51
Mean pore diameter, Å	127	91
<b>Pore size distribution, vol %</b>		
<50Å	3.09	18.32
50-100Å	6.71	58.45
100-250Å	69.09	22.84
250-500Å	15.02	0.23
500-2000Å	6.09	0.16
>2000Å	--	--
<b>Chemical properties</b>		
Molybdenum, % <del>peso weight %</del>	10.66	12.89
Nickel, % <del>peso weight %</del>	2.88	--
Cobalt, % <del>peso weight %</del>	--	2.5
Sodium, wppm	412	--
Titania, % <del>peso weight %</del>	3.73	3.2

Please amend Table 15, on page 40, as follows:

TABLE 15  
Properties and compositions of hydrotreated residua

Properties	ASTM Method	STAGE I	STAGE II
Number of reactors		1	1
LHSV, $\text{h}^{-1}$	Operating Temp., °C	400	380
API Gravity	D-287	13.94	14.72
Total sulfur, weight %	D-4294	2.47	1.32
Total nitrogen, wppm	D-4629	4,520	3,340
Asphaltenes, weight %	D-3279	12.76	11.25
Metals, wppm			
Ni + V		364.9	304
Sediments and sludge, wt%	D-4870	0.028	0.03
Conversion, volume %		22.3	31.3
	Composition, volume %		
Fraction IBP-170°C		1.7	2.8
Fraction 170-360°C		12.9	15.9
Fraction 360-538°C		35.7	37.3
Fraction 538°C <sup>+</sup>		49.7	44.0
Fraction IBP-538°C <sup>+</sup>		50.3	56.0

Please amend Table 17, on page 43, as follows:

**TABLE 17**  
**Operating conditions with low pressure for the catalytic hydrotreatment of a residue of atmospheric distillation in two fixed-bed reactions stages**

Operating conditions	Stage		
	I [[y]] <u>and</u> II	I [[y]] <u>and</u> II	I [[y]] <u>and</u> II
Temperature, °C	400	400	400
Pressure, kg/cm <sup>2</sup>	70	70	70
LHSV, h <sup>-1</sup>	0.284	0.33	0.33
H <sub>2</sub> /HC ratio, nl/l	534	534	534
Purity of hydrogen, mole %	75	75	100

Please amend Table 20, on page 47, as follows: Table 20 same as Table 17.

**TABLE 20**  
**Properties and compositions of residua in an ebullated-bed reactor**

Properties	ASTM Method	Hydrotreated product (Stages I [[y]] <u>and</u> II)		
LHSV, h <sup>-1</sup>		0.284	0.33	0.33
Purity of hydrogen, mole %		75	75	100
API Gravity	D-287	17.07	16.25	16.85
Total sulfur, weight %	D-4294	1.70	1.85	1.76
Total nitrogen, wppm	D-4629	3,580	3,650	3,610
Asphaltenes, weight %	D-3279	4.78	5.68	5.66
Metals, wppm				
Ni + V		129	170	150
Sediments and sludge, weight %	D-8470	0.56	0.47	0.54
Conversion, volume %		7.8	9.3	14.2
Composition, volume %				
Fraction Fraction IBP-170°C		2.5	2.4	2.4

Fraction 170-360°C	23.2	20.8	18.4
Fraction 360-538°C	22.5	25.8	31.0
Fraction 538°C+	51.8	51.0	48.2
Fraction IBP-538°C+	48.2	49.0	51.8

---